

CLAIMS

1. A staple remaining amount detecting apparatus in an electric stapler, used in an electric stapler comprising a staple cartridge provided attachably and detachably to and from a magazine portion of a stapler main body for containing sheet-like staples each constituted by connecting a number of staples in a straight form in a sheet-like shape in a stacked state, wherein the staples are guided out to outside of an opening portion of a lower end portion of a front wall of the cartridge main body successively from a lower end portion of the sheet-like staples, comprising:

an engaging plate arranged at an upper portion of the cartridge main body and engaged with the sheet-like staple at a topmost portion; and

15 a position detecting mechanism provided on an inner side or an outer side of the cartridge main body for detecting a position of the engaging plate,

wherein a remaining amount of the sheet-like staples is detected based on detection of the position by the position 20 detecting mechanism.

2. A staple remaining amount detecting apparatus in an electric stapler according to claim 1, wherein the position detecting mechanism comprises a conductor and an output terminal provided at the conductor,

wherein the engaging plate is provided with an electrode

made to be slid while being brought into contact with each of the conductors, and

wherein a position of the engaging plate is detected based on a value of a voltage measured across the output terminals, and the remaining amount of the sheet-like staples is detected based on detection of the position.

3. The staple remaining amount detecting apparatus in an electric stapler according to claim 1, wherein the position detecting mechanism comprises a portion of transmitting and a portion of reflecting light,

wherein the engaging plate is provided with an optical sensor, and

wherein the position of the engaging plate is detected by numbers of times of transmitting and cutting off light irradiated to the portion of transmitting and the portion of reflecting light, and the remaining amount of the sheet-like staple is detected based on detection of the position.

20 4. A staple remaining amount detecting apparatus in an electric stapler, used in an electric stapler comprising a staple cartridge provided attachably and detachably to and from a magazine portion of a stapler main body for containing a number of staples each in a straight form and wound in a roll-like shape, wherein the staples are successively guided out to outside of an opening portion of the cartridge main

body from the staple at a front end portion, comprising:

an engaging plate arranged at an upper portion of the cartridge main body and engaged with an upper end of the roll-like staple; and

5 a position detecting mechanism provided on an inner side or an outer side of the cartridge main body for detecting a position of the engaging plate;

wherein a remaining amount of the sheet-like staples is detected based on detection of the position by the detecting
10 mechanism.

5. The staple remaining amount detecting apparatus in an electric stapler according to claim 4, wherein the position detecting mechanism comprises a conductor and an output terminal
15 provided at the conductor,

wherein the engaging plate is provided with an electrode made to be slid while being brought into contact with each of the conductors, and

wherein the position of the engaging plate is detected
20 based on a value of a voltage measured across the output terminals, and the remaining amount of the sheet-like staples is detected based on detection of the position.

6. The staple remaining amount detecting apparatus in
25 an electric stapler according to claim 4, wherein the position detecting mechanism comprises a portion of transmitting and

a portion of reflecting light,

wherein the engaging plate is provided with an optical sensor, and

wherein the position of the engaging plate is detected
5 by numbers of times of transmitting and cutting off light irradiated to the portion of transmitting and the portion of reflecting light, and the remaining amount of the sheet-like staples is detected based on detection of the position.

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